Efficacy of probing as treatment of epiphora in adults with blocked nasolacrimal ducts

Ana Guinot-Saera, Peter Koay

Abstract
Aims—To determine the efficacy of probing in the initial treatment of epiphora and the symptom free period in adults with blocked nasolacrimal ducts.

Methods—The results of probing in 85 eyes with epiphora due to nasolacrimal duct obstruction were studied retrospectively after a mean follow up of 7.4 months (SD 11.6) by a questionnaire and interview survey of patients.

Results—35% of the eyes had an outcome of no watering after probing, 17% mild watering, 35% moderate watering, and 11% severe watering. The patients' satisfaction (watering subjectively improved) after undergoing this procedure was 82%, which is higher than previously reported. The mean symptom free period in eyes with no watering was 11.25 months, in eyes with mild watering 8.20 months, in eyes with moderate watering 5.35 months, and in eyes with severe watering 0.95 months. There was a significant difference (p=0.001) in the symptom free period between the no watering and severe watering groups.

Conclusions—Probing in adults with confirmed nasolacrimal duct obstruction can be recommended as an initial treatment procedure because of its relatively good efficacy and high patient satisfaction without compromising subsequent surgical treatment if unsuccessful.

Department of Ophthalmology, Darlington Memorial Hospital, Darlington, County Durham DL3 6HX
A Guinot-Saera
P Koay

Correspondence to: Dr A Guinot-Saera, C/Alvaro de Bazan, 22, 17, 46010-Valencia, Spain.

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four times daily, following the procedure for a period of 7–10 days.

The results obtained by questionnaire and by interview following the probing procedure were recorded. Patients’ post probing epiphora was graded into four groups: no watering, mild watering (watering outdoors only), moderate watering, and severe watering. These groups were considered as excellent, good, medium, and failure, respectively. If the epiphora was present, patients were asked if this was tolerable or not. Special attention was paid to the length of time free of symptoms (symptom free period). Probing was arbitrarily judged to be a success if there was no watering or mild watering for at least 6 months following the procedure. Patient satisfaction with the procedure was also determined. Statistical comparison of discrete variables between the outcome groups was made with the unpaired Student’s t test.

Table 1 Demographic data

<table>
<thead>
<tr>
<th>Eyes in study</th>
<th>85</th>
<th>41 (right NLD)</th>
<th>44 (left NLD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients in study</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>Mean 64.16</td>
<td>SD 15.58</td>
<td>Range 19–89</td>
</tr>
<tr>
<td>Sex distribution</td>
<td>Male 27</td>
<td>Female 38</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1 The number of eyes in each category of epiphora after probing.

Results

Ninety eight per cent of the NLDs were patent in the operating theatre following the probing procedure. This includes the 85 eyes that met the criteria. The mean follow up time of probed patients was 7.4 (SD 11.6) months. There were no significant age and sex ratio differences between patients of the different outcome groups (that is, no watering, mild, moderate, and severe watering). Thirty eyes (35%) had an outcome of no watering and 15 (17%) were mild watering (waters only out of doors, in cold weather, or wind). The clinical success rate of the procedure was of 52% in terms of either completely relieving or resulting in only mild watering. Thirty eyes (35%) had an outcome of moderate watering and only 10 of the eyes (11%) still suffering of severe watering after the procedure (Fig 1).

Of the 15 patients with mild watering after probing, all of them (100%) describe their symptoms as tolerable. In patients with moderate and severe watering, 80% and 1% describe their symptoms as tolerable, respectively (Table 2). Eighty two per cent of the patients felt that their symptoms of watering had improved after probing, reflecting patient satisfaction with the procedure. Figure 2 and Table 3 show the mean symptom free period in the eyes after probing for each of the groups. There was significant difference (p=0.001, unpaired t test) in the symptom free period between the no watering and severe watering groups. No statistical significance (p>0.01) was found between the others groups.

Out of the 85 probing procedures carried out, there were two postoperative complications consisting of one nasal obstruction and one dacryocystitis. The complication rate for probing in this study was 2%. Nine of the 85 eyes (10.5%) subsequently required a dacryocystorhinostomy (DCR), eight of these eyes were in the outcome group of severe watering, and one was in the moderate watering outcome group.

Discussion

Epiphora due to obstruction of the nasolacrimal system is a common ophthalmic problem causing discomfort, visual disturbances, and skin problems such as excoriation. Probing is a simple operative procedure easily performed in adults under local anaesthesia with minimal postoperative morbidity. In contrast, other treatments for adult epiphora due to NLDO are more invasive and are associated with a greater risk of complications. Such procedures include DCR Jones’s procedure, Palmaz balloon expandable metallic stents, and canaliculodacryo intubation. These procedures
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are complex, time consuming, requiring more resources, and often involve general anaesthesia with its attendant risks. The success rates (that is, not watering and mild watering) for DCR with comparable criteria to this study range from 83% to 87.4%.26–29 However, complications of DCR includes intraoperative problems such as haemorrhage, trauma, loss of nasal mucosa, CSF leak, and postoperative problems such as haemorrhage, infections, acute dacryocystitis, tube complications (granuloma formation), and scar complications (webbing).

In conclusion, probing for NLDO in adults with symptomatic watering has an 82% success in relieving symptoms. These results are more favourable than the earlier report.4 It is a simple, quick, cost effective, day case procedure and does not compromise the patient for further nasolacrimal surgery. A single probing procedure is effective in producing symptomatic improvement, when limited to use in patients with complete obstruction of the nasolacrimal duct and when watering was the only symptom. Our investigation confirms that probing, as an initial procedure, is an adequate and minimally invasive treatment for adult epiphora and can be an alternative to DCR, especially in elderly patients.

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